Chapter

Assessment of Primary Dysmenorrhea and Its Effect on the Quality of Life among Female Students at University of Babylon

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Abstract

Primary dysmenorrhea (PD) is a painful menstrual flow in the absence of any pelvic pathology where pain is spasmodic in character and felt mostly in the lower abdominal area. PD considered as common problem in females at reproductive age, it's directly affects the quality of life (QoL). The main objective of this study is to find out the relationship between PD and QoL of among female students. Descriptive correlational study design carried out on (145) female students, purposive sampling, and their ages between (18–25) years, participants were selected from four faculties at the University of Babylon. Numeric rating pain scale (11-point scale) was used for assessing pain intensity, QoL has been assessed by the SF-36 health survey (SF-36). Data have been collected by using a structured interview as method of data collection and using questionnaire as study tool. Data were processed and analyzed by using SPSS version (25). The findings of the present study revealed that (62.1%) of respondents reported as severe primary dysmenorrhea. The greatest proportion of female students with fair QoL and (17.9%) with poor QoL. The study's finding finds out a negative significant correlation between PD intensity and overall QoL scale at $P \leq 0.05$ ($r = -0.642$, $P = 0.000$).

Keywords: primary dysmenorrhea, quality of life, female students, effect, assessment

1. Introduction

The transitional period of females from childhood to be sexually mature and become capable of production is termed as puberty. Throughout this transition several alterations will take place including hormonal, psychological, cognitive and physical changes besides to the evolution and sexual developments, these changes occur synchronously. The prime physiological change in girl life is the onset of menarche which is special event in females' life due to the first occurrence of menstruation [1].

Menstrual cycle is a natural phenomenon, it is a significant sign of females' health, and it is an important indicator of endocrine function. Yet, data on experience of menstrual cycle and its influence on the health conditions, quality of life (QoL) and social integration among females in developing countries are still insufficient [2].

Menstrual cycle is a periodical, cyclical and interim vaginal bleeding; begin with first occurrence of menstruation (menarche) until menopause. Moreover, its deemed as one of mammal's characteristics especially human, it is described as regular, repeated uterine bleeding depending on endometrial degeneration, that takes place each 21 to 35 days in normal regular menstrual period, within 2 till 6 days of blood flow and average of blood losses 20 to 60 mL, as general it persist up to 40 years [3, 4].

There are several structures of women's body that will cooperate with each other in order to initiate the menstrual blood flow, these structures are: hypothalamus, pituitary gland, ovaries, and uterus. All the four structures must play a part for the ovulation; menstruation commence when fertilization does not occur; menstruation (shedding of the endometrium) marks the beginning of the monthly cycle [5].

One of most common menstrual disorders is dysmenorrhea; which is an episode of uterine cramp in the lower abdominal segment, immediately before or during cycle, dysmenorrhea variance among women. There is lack in understanding the menstrual cycle disorders especially dysmenorrhea. Furthermore, lack of knowledge related to this condition among young girls because they receive scarce education on dysmenorrhea [6].

Dysmenorrhea is either primary which mean it is not related to pathological reasons or secondary related to pathological reasons. Primary dysmenorrhea (PD) occurs because of excessive amount of prostaglandin which is produced during the disintegration of pre-menstrual uterine endometrium. While, the pain is caused by a disorder in the women's reproductive organs, such as endometriosis, adenomyosis, uterine fibroid, or infections, called secondary dysmenorrhea. Pain severity may be measured by using scaled as "no pain, mild pain, moderate pain, severe pain and worst possible pain" [7].

Primary dysmenorrhea is frequent, yet is a challenging problem in Gynecology. Primary dysmenorrhea often, occurs in most if not all women; until this moment is still poorly understood and is seldom taken into consideration when assessing females' general health and life experiences [8].

PD clinical manifestation may include lower back pain, premenstrual irritability, nervousness, fatigue, depressed mood, headache, some of gastrointestinal symptoms such as; nausea, vomiting, bloated abdomen and difficulty in emptying the intestines with constipation or diarrhea, an urge to urinate frequently that can be noticeable in women with PD at least a part or for the duration of the menstrual period [9].

The clinical manifestations of primary dysmenorrhea have tremendous and negative effect on quality of life at least for several days from each calendar month. Primary dysmenorrhea is a complicated manifestation, that impacts on the quality of life and minimizes productiveness of females. An estimation that (50%) of teenagers and adult women or adolescent girls skipped schools or work at littlest once time because of feeling of discomfort and pain which is accompanied with menstrual cycle. This unrelieved acute pain of menstrual cycle can influence inversely on the pulmonary, cardiovascular, gastrointestinal, endocrine and immunity. In addition, the unrelieved chronic pain may inhibit the immunity, result in anger, fatigue, disability, and depression [10].

Primary dysmenorrhea as menstrual cycle disorder resulting in serious condition among women especially young females because its effect is not only about future fertility, it also affects their mental health and quality of life (QoL) [11].

Quality of Life is "defined as a subjective phenomenon based on individual perception, experiences, beliefs, and expectations. Nowadays, QoL has become an issue in many clinical studies" [12].

Wilson and Cleary (1995) suggest a model defining the process by which woman's physical health status, such as dysmenorrhea, effect on their quality of life (QoL). They put forward that both factors biological and psychological may result in physical and psychophysical manifestations, that probably later impact on functioning and quality of life [13].

Primary dysmenorrhea present features of acute and chronic pain; it is a recurring and regular onset of pain, in spite of its short time span. Yet, astonishingly few of females are known about what the impact of PD on the quality of life. There are extremely scant reports about emotional troubles in females who experiences periodical PD [14].

The most common cause for poorer quality of life is pain depending on precedent researches, QoL observed to be lesser in women with PD [15].

2. Research main body

2.1 Overview

Primary dysmenorrhea (painful periods) that are still little understood. PD is a clinical term used to describe pain that experienced during menstruation. PD is a significant clinical problem and results in considerable public health burden. Primary dysmenorrhea is not associated with any underlying pathological causes. The precise mechanisms responsible for the symptoms of primary dysmenorrhea are need to be elucidated [16].

The menstrual period is hormonally intermediated events which take place in four structures in the females' body. These females' biological structures are participating in the functioning of the menstrual period are: hypothalamus, pituitary gland, ovaries and uterine endometrium. For a menstrual period to initiate all 4 biological structures should collaborate; deactivate of any structure will results in an incomplete and ineffective period [17].

Primary dysmenorrhea increased rhythmic uterine contractions from vasoconstriction of small vessels of the uterine wall. This condition impacts a females' ability to achieve their daily activities for 2 or several days every month it is used to start within few years of the beginning of ovulatory cycles at menarche [18].

Degree of intensity include: mil, moderate, and severe; mild PD its agonize menstruation that rarely obstructs the normal activity and analgesics are rarely required, moderate pain is defined as aching menstrual cycle which impacts on daily activity and analgesic are necessary to give relief, in addition to severe pain which mean painful cycle which clearly obstructs daily activity and the pain is not completely relieved by analgesic [19].

Etiologies of PD are not exactly understood, but preponderance features may be clarified via an action of the uterine prostaglandin, generally. Prostaglandin (PGs) is ubiquitously diffused intra-cellular materials which is derived from the long chains poly-un-saturated fatty acid, like arachidonic acid, a usual ingredient of cells membrane phospholipids. Prostaglandins has existing to own a range of impacts on general range of biological and functional as pathological actions containing pain, inflammations, body temperature, also regulation of the sleep. PGs manufacturing and releasing is limited to an availability of free fatty acid predecessors for the arachidonic acid that regulated via cyclic adenosine phosphates. By the cyclical adenosine phosphates, PG manufacturing can be motivated via materials like adrenalin, a peptide hormone & the steroid hormone, besides the mechanical motivation and tissue injury [20].

Arachidonic acid is created from the phospholipids via a lysosomal enzyme phospholipase A2. The stability of the lysosomal activities regulated through several factors, one of these is the progesterone's level; the raised progesterone level tend to steady the activity of the lysosomes, on the other hand the dropping level tends to decrease the lysosome activity. Thus, the reduction in the progesterone's level will go along with the regression of corpus luteum in late luteal phase of menstrual period result in removal of this stabilizing impact on uterine endometrial lysosome, the releasing of phospholipase A2, menstrual period flow and hydrolysis of phospholipid from cell membrane to produce extra arachidonic acid [21].

Consequently, the continuing accessibility of arachidonic acid together with intracellular damage besides tissues' trauma through menstrual period, favoritism manufacturing of PGs. All the females have raised level of PGs during a luteal phase of period as comparison with the follicular phase of ovulatory periods. Though, as a comparison among females with eumenorrheic and females with primary dysmenorrhea, detected that the females with PD have upper level of PG, as measured in a luteal phase of endometrial biopsy [16].

The circulation of PGs (PGF2a & PGE2) is recorded higher level in females with primary dysmenorrhea as comparison with asymptomatic females throughout menstrual period, and this PG's level are uppermost in first forty-eight hours of menstrual period, when signs & symptoms topmost. Additionally, the severity of menstrual period's pain and accompanied features of primary dysmenorrhea are directly related to the amount of PGs that is released [22].

Moreover, when exogenous PGs is clinically administered lead to uterine contraction and produces identical systemic features which recurrently associated with primary dysmenorrhea, containing gastrointestinal symptoms; that means the PGs are causing painful uterine contraction and accompanied systemic clinical manifestations which is associated with primary dysmenorrhea [23].

On the basis that the endometrium is exposed to a luteal phase's progesterone its crucial to increase the production of uterine's PGs, primary dysmenorrhea supposed to happen just in the ovulatory menstrual period; while many studies has been challenged in terms of a basal body's temperature that utilized in order to differentiate between the ovulatory and anovulatory menstrual periods. There is no difference in the severity of menstrual periods symptoms, as well as pain, between the ovulatory and anovulatory menstrual periods among females with PD [24].

P.D. is a significant clinical problem and results in considerable public health burden. In 2007, an International Associations for the Study of Pain calculated roughly that those in every menstrual cycle, about 10% _15% of females with primary dysmenorrhea were incapable for working about 1–3 days. For example in the United States (U.S.), there is lost approximately (140) million of working hours because of PD every year. In Japan, it was predicted that monetary lost because of PD computed as $4.2 billion dollar every year. In India it has been detected that about 42% self-medicated and approximately 35% consumed unfitting drug and they used mefenamic acid as a NSAID in order to decrease the pain of PD [25].

Pain is considered as one of the major contributors for poor QoL. PD is a periodic pain state, in which females suffering from acute events of agonizing cramping during the menstrual periods. There is inadequate literatures on an associations among socio-demographical characteristics and menstrual cycle elements with severity of PD and the experiences of the female's students with PD to increase the understanding of phenomenon and the effects on the life of this group of sufferers [26].

Investigation of quality of life domains in females with primary dysmenorrhea manifestations has received very little attention. From menarche and throughout

the pubertal years there are significant rise in depressive features and anxiety and smoking activities; it is critical to study that association of these problems with menstrual period disorders especially primary dysmenorrhea. The existence of both emotional and behavioral troubles can aggravate PD symptoms; it has been detected when evaluating the causes PD [27].

2.2 Methodology

2.2.1 Design of the Study

A descriptive correlational study design was carried out in order to assess the severity of primary dysmenorrhea, and its effect on quality of life among female students whose ages are between (18 to 25) years old, at the University of Babylon in the province of Babylon, from the period 1st September 2018 to 14th August 2019.

2.2.2 Administrative arrangements

Formal administrative agreements were acquired for conducting the current study before data collection. The Ethical Committee of the college of nursing approved the protocol for this study. Consent was attained from the University of Babylon from the colleges that involved as study's sitting which include; faculty of basic education, faculty of human education, college of engineering and college of science. Written consent was attained from the subjects undergone the study, any participant will have the right to retreat from the study at any time.

2.2.3 Setting of the study

The current study has been carried out in Babylon governorate at University of Babylon which consists of (21) colleges, (4) colleges were selected randomly to accomplish the study and then select department from each college as 10% randomly.

2.2.4 Study sample

A non-probability (purposive) sample; 30% of target population was selected of female students, were consisted of (145) participants. The selection included participants who have mild, moderate and sever intensity of primary dysmenorrhea. It is selected from (4) faculties.

2.2.5 The study instrument

Through the extensive review of relevant literatures and previous studies, a questionnaire constructed for the purpose of the study. It is composed of seven parts. The first one is demographic data, second part is Numeric Pain Rating Scale (NPRS), the third part is dietary habits, the fourth part is family history, the fifth part is pain reliever history, sixth part is menstrual history, and last one is SF-36 Health Survey of quality of life.

2.2.6 Method of data collection

After taking an approval from the institutional ethical committee, the data was collected. The participation of study subjects was on voluntarily basis, written

consent obtained from female students who willing to participate. Data attained by utilization of the study tool (questionnaire) and face-to-face interview, structured interview as method of data collection. The investigator was available on the site during distribution of questionnaire, to explain for them the objectives behind the study and to avoid any form of misunderstanding and to facilitate accurate response by the subjects.

Data collection started from 9th of January 2019 to 13th of March 2019. Close end questions used in the questionnaire. Time was consumed for each interview approximately (15_20) minutes.

2.2.7 Methods of data analysis

The data of the present study was analyzed by the Statistical package of social science (SPSS) version (25). The tests which were used in this study were derived from both: descriptive and inferential statistic, which includes: frequencies, percentage, mean of scores, standard deviation, Chi-square and Pearson product–moment correlation; all of these tests were used in order to achieving the objectives of study.

2.3 Result

Table 1 reveals that a (61.1%) of the sample were within the age group (18–21) years old, the highest percentage represented (42.1%) of the female students are in second grade. According to the occupational status majority of participants (92.4%) were not working. The largest proportion of them sample were unmarried represented (89%). The table shows that (57.2%) were satisfied with their socio-economic condition; with respect to the sample address it has been found that (84.8%) of them live in the urban. Majority of them (95.9%) living with their families. Finally, (64.1%) of study sample were recorded a BMI ($18.5 < BMI < 25$).

As shown in **Table 2**, the highest percentage represented (62.1%) of the sample experience severe pain.

This table shows that the greatest proportion was tea consumers constituted (63.4%) and chocolate (62.1%), then (41.4%) cola, and coffee was (22.1%).

Table 4 demonstrate that the highest percentage was sister history of PD (56%), and (34.6%) belong to mothers history of PD while, (32%) belong to others such as aunts.

Table 5 shows that highest percentage of the sample constitutes (61.4%) used pharmacological relievers for primary dysmenorrhea during their menstrual period.

The table shows that highest percentage represented (61%) of the sample their age of menarche were between (13–15) years old; (52%) their duration of menstrual cycle between (3–5) days. Moreover, a (62.1%) of sample were with regular interval of menstrual cycle.

This table displays the mean of the subscales of quality of life which shows that most of sample with fair level of assessment related to the QoL domains.

The table has clarified that the majority (83.4%) of female students with fair QoL. While (9.0%) were with poor QoL.

In this table Pearson correlation coefficient was used in order to illustrate that there is a negative significant correlation between intensity of P.D. and QoL among female students at $P \leq 0.05$ ($r = -0.642$, $P. = 0.000$). The outcome of statistical test demonstrates that there is significant correlation between the average scores of study subjects with P.D. and overall QoL scale.

Variables	Groups	F	%
Age	18–21	89	61.4
	22–25	56	38.6
	Mean = 21.01	S.D. ± 1.557	
College's grade	First grade	23	15.9
	Second grade	61	42.1
	Third grade	14	9.7
	Fourth grade	47	32.4
Occupation	Working	11	7.6
	Not working	134	92.4
Marital status	Married	16	11.0
	Un married	129	89.0
Socioeconomic status	Satisfied	83	57.2
	Satisfied to some extent	54	37.2
	Not Satisfied	8	5.5
Address	Urban	123	84.8
	Rural	22	15.2
Residency	Living with family	139	95.9
	Dormitory	4	2.8
	Live with others	2	1.4
Body Mass Index	Below weight (BMI < 18.5)	6	4.1
	Normal weight (18.5 < BMI < 25)	93	64.1
	Over weight (BMI > 25)	46	31.7

f = frequency, % = percentage, SD = standard deviation.

Table 1.
Distribution of female students by their demographical characteristics (N = 145).

Dysmenorrhea intensity	F	%
Mild	18	12.4%
Moderate	37	25.5%
Severe	90	62.1%
Total	145	100%

f = frequency, % = percentage.

Table 2.
Numeric pain rating scale for assessing the intensity of primary dysmenorrhea in the female students (N = 145).

This table revealed that there was significant association between P.D. intensity and marital status. While, there were a non-significant associations with whole demographical data except marital status at $P \leq 0.05$.

This table revealed that there were significant and highly significant associations between P.D. intensity and overall SF-36 scale of quality of life at $p \leq 0.05$.

2.4 Discussion

Many studies and literatures emphasize that the sociodemographic characteristics are relate to most of the nursing subjects because nursing as a science deals with human being, people life, and health issues in different age groups and situations, the present study deals with the primary dysmenorrhea and its effect on QoL of female students; result show in **Table 1**, that high percent of sample undergone the study within age group (18–21) this may due to criteria of selection of the current study's sample, and the lawful age of students in colleges and universities; this result consistent with A cross-sectional study by Chia et al. [28].

Table 1 displayed that the highest percentage of them were female students in second grade, this might be due to the availability of the sample without interference from the researcher; while, the findings of cross-sectional study [29] to determine the prevalence and associated factors of primary dysmenorrhea and its impact to the students' daily activities, showed that the highest percent was first grade. Related the occupational status majority of respondents were not working, most of the students in this age group found to be busy with study requirements and they cannot enroll in any job specially the morning study's students.

In regard to the place of residency it has been found that the majority of female students that are living in urban as it displayed in **Table 1** and that finding matches with a cross-sectional study by Tawfeek [30], her result shown that most of sample from urban; while, findings of other study [30] carried on (900) girls from (8) schools; showed that (469) were of rural residence while (431) were urban ones.

In respect to the residential status the present study result reveals that almost all the female students were living with their families as illustrated in **Table 1** and that contrary to Habibi's [31] showed that the highest value belong to dormitory living.

The current study results revealed that majority of the sample were unmarried, that congruent with a descriptive study findings [32].

The findings of the present study in **Table 1** showed that more than fifty percent were satisfied with their socio-economic condition, which form the highest value, on the other hand, a cross-sectional study [33] exhibited that half of sample stated as satisfied to some extent; this variance may belong to the contentment that widely spreading in Iraqi community and that did not indicated in necessary they are with good socio-economic status but it give them sense of satisfying.

In the light of this study and regarding the BMI a high percentage of respondents were showed normal weight as clarified in **Table 1**, this finding is in line with study [34] confirmed that the majority had BMI within the standard range.

The findings in **Table 2** demonstrated the outcome of Numeric Pain Rating Scale for assessing pain severity; which shows the highest proportion reported sever pain then followed by moderate, and finally mild. It's well known that even with mild level of pain the quality of life of girls may be affected. The study's finding is not consistent to another study [11] that found only (17.7%) of their participants experience severe PD during their period.

In most cases of primary dysmenorrhea the girls may turn to some habits as well as some of those habits may have an influence on their condition. This study deals with them as variables. The results related to dietary habits as showed in **Table 3** which displayed that the highest percentage of sample were tea consumers; while non-of them was reported as smoker, this result as culture is true where most of our people are consuming tea most of their day time. This result seem to be close to findings of the study conducted by Faramarzi and Salmalian [35] in Iran on (360) medical science female students, they verified that most of their students drank tea.

The present study was revealed that all the participants had one or more than one family member or relative experience this pain as demonstrated in **Table 4**,

Dietary Habits	F	%
Cola	60	41.4%
Coffee	32	22.1%
Tea	92	63.4%
Chocolate	90	62.1%

f = frequency, % = percentage.

Table 3.
Dietary habits among female students with primary dysmenorrhea (N = 145).

Family History of PD	F	%
Mother history of PD	45	34.6%
Sister History of PD	73	56.2%
Others	42	32.3%

f = frequency, % = percentage.

Table 4.
Distribution of sample related to their family history of primary dysmenorrhea.

usually and in most conditions and cases like what this study concern with this type of variable is crucial because of the genetic factors. The current result disagree with a study [36] which indicate that most of their sample had no family history regarding to primary dysmenorrhea.

In regard to the pain relievers used by girls during PD, the results confirmed that more than half of them were using pharmacological substances during their period to reduce the cramps and pain discomforts as soon as possible as declared in **Table 5**, a study conducted [37] stated that more than half of their sample using pharmacological substances to relieved their pain.

The onset of menstruation is a part of maturation process, after retrieved articles documenting the menstrual history related to PD, studies revealed that the history of first period vary according to the country and the climate as well as the geographical area. It has been appeared from the current study that Mean and SD of menarche's age for females was (13 ± 1), usual menstrual duration (per days) was (5 ± 1) and more than half of the respondents were with regular menstrual period as illustrate in **Table 6**; a study [14] showed that Mean and SD of the age of menarche was (13 ± 2) and Mean & SD for menstrual period duration was (5 ± 1) these finding similar to current study's findings.

When assess the QoL among female students who experience PD **Table 7**, result revealed that majority of the females with fair QoL assessment, while only few stated good QoL as showed in **Table 8**. A study [9] proved that highest percentage was with poor QoL, with negative impact on the QoL, mainly as related to

Pain reliever	F	%
Pharmacological	89	61.4%
Non pharmacological	54	37.2%
Hormonal therapy	2	1.4%

f = frequency, % = percentage.

Table 5.
Pain relievers history used with primary dysmenorrhea (N = 145).

Variables	Groups	F	%
Age of Menarche	10–12 years	51	35%
	13–15 years	88	61%
	Above 15 years	6	4%
Mean = 13.15		SD ± 1.249	
Duration of Cycle	3–5 Day	76	52.5%
	6–8 Day	69	47.5%
Mean = 5.57		SD ± 1.279	
Type of Cycle	Regular	90	62.1%
	Irregular	55	37.9%

f = frequency, % = percentage.

Table 6.
Menstrual characteristics for female students with primary dysmenorrhea.

Quality Rank	QoL's rating	F	%
Poor QoL	1–1.66	13	9.0
Fair QoL	1.67–2.33	121	83.4
Good QoL	2.34–3	11	7.6
Total		145	100%

Table 7.
Assessment of overall quality of life scale of female students with primary dysmenorrhea (N = 145).

university attendance and performance and social relationships. Tanmahasamut and Chawengsettakul [38] agreed with current study's findings, they confirm PD in students has high prevalence and it has result in poor quality of life.

The current study illustrated a negative significant correlation between the average scores of study subjects with P.D. and overall QoL scale at $P \leq 0.05$ ($r = -0.642$, $p = 0.000$), in other words when severity of P.D. pain level increase the quality of life decrease as introduced in **Table 9**. A descriptive study [39] reported that the reduction in QoL was clearly linked to the presence of primary dysmenorrhea.

The present study demonstrated that there is no significant association between socio-demographical features and the intensity of P.D except with marital status as displayed in **Table 10**; there are limited studies on an association of P.D intensity and socio-demographical characteristics.

Present study findings incompatible with a study [33] which accentuated in their results that the risk of primary dysmenorrhea increase in those who had lower incomes as well as in those with family history of P.D. Another study [40] similar to current study's findings revealed that there was no significant association between pain relievers use, dietary habits, and BMI of students with PD, except for coffee consumption at ($P < 0.001$); also no significant association between menstrual cycle characteristics and primary dysmenorrhea was revealed except for menstrual period bleeding duration and family history.

The current study showed in **Table 11** that there were mostly significant and highly significant associations between P.D. intensity and overall SF-36 scale of quality of life at $\boldsymbol{p \leq 0.05}$. Pain has negative impact on females' life, especially during menstrual period, because it's accompanied with hormonal alterations; that

NO.	Items	Never	Sometimes	Always	Mean	Ass.
General health domain:						
1.	In general, would you say your health is good?	27	108	10	2.12	Fair
2.	Compared to one year ago, you would say that your health in general is better now?	38	71	36	2.01	Fair
3.	I seem to get sick a little easier than other people	42	54	49	1.95	Fair
4.	I am as healthy as anybody I know	33	84	28	2.03	Fair
5.	I expect my health to get worse	21	79	45	1.83	Fair
6.	My health is excellent	35	85	25	2.07	Fair
Domain mean = 2.0016		Assessment = Fair				
Limitation of activities domain:						
1.	Do you find difficulty while performing Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports?	52	68	25	2.19	Fair
2.	Do you find difficulty while doing Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	35	58	52	1.88	Fair
3.	Do you find difficulty when Lifting or carrying groceries?	25	59	61	1.75	Fair
4.	Do you find difficulty when Climbing several flights of stairs?	50	61	34	2.11	Fair
5.	Do you find difficulty when Climbing one flight of stairs?	80	45	20	2.41	Good
6.	Do you find difficulty when Bending, kneeling, or stooping?	80	46	19	2.42	Good
7.	Do you find difficulty when Walking more than a mile?	37	63	45	1.94	Fair
8.	Do you find difficulty when Walking several blocks?	27	60	58	1.79	Fair
9.	Do you find difficulty when Walking one block?	43	45	57	1.90	Fair
10.	Do you find difficulties when Bathing or dressing yourself?	105	29	11	2.64	Good
Domain mean = 2.1031		Assessment = Fair				
Physical health problems domain:						
1.	Cut down the amount of time you spent on work or other activities	23	94	28	1.97	Fair
2.	Accomplished less than you would like	32	83	30	2.01	Fair
3.	Were limited in the kind of work or other activities	35	54	26	2.06	Fair
4.	Had difficulty performing the work or other activities (for example, it took extra effort)	33	90	22	2.08	Fair
Domain mean = 2.0293		Assessment = Fair				
Emotional health problems domain:						
1.	Cut down the amount of time you spent on work or other activities	38	87	20	2.12	Fair
2.	Accomplished less than you would like	31	94	20	2.08	Fair

NO.	Items	Never	Sometimes	Always	Mean	Ass.
3.	Didn't do work or other activities as carefully as usual	35	75	35	2.00	Fair
	Domain mean = 2.0665		Assessment = Fair			
Social activities domain:						
1.	Have you had emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	47	63	35	2.08	Fair
2.	During the menstrual cycle, most of the time your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	49	78	18	2.21	Fair
	Domain mean = 2.1483		Assessment = Fair			
Pain domain:						
1.	Have you had bodily pain during the menstrual cycle?	13	64	68	1.62	Poor
2.	During the menstrual cycle, have you had pain interfere with your normal work (including both work outside the home and housework)?	55	73	17	2.26	Fair
	Domain mean = 1.9403		Assessment = Fair			
Energy and emotion domain:						
1.	Did you feel full of pep?	26	87	32	1.96	Fair
2.	Have you been a very nervous person?	52	70	23	2.20	Fair
3.	Have you felt so down in the dumps that nothing could cheer you up?	43	75	27	2.11	Fair
4.	Have you felt calm and peaceful?	30	90	25	2.03	Fair
5.	Did you have a lot of energy?	24	82	39	1.90	Fair
6.	Have you felt downhearted and blue?	38	79	28	2.07	Fair
7.	Did you feel worn out?	43	79	23	2.14	Fair
8.	Have you been a happy person?	21	90	34	1.91	Fair
9.	Did you feel tired?	54	72	19	2.24	Fair
	Domain mean = 2.0613		Assessment = Fair			
Ass. = assessment, level of assessment: (1–1.66) as poor level, (1.67–2.33) as fair level and (2.34–3) as good level of QoL.						

Table 8.
Distribution of female students according to their quality of life (SF-36) scale.

		Primary dysmenorrhea intensity
Quality of life	*r*	−.642-**
	Sig.	.000
	N	145

r = *(Pearson correlation), sig = (significant).*
*** Correlation is significant at the 0.01 level.*

Table 9.
Correlation between quality of life & primary dysmenorrhea.

Sociodemographic variable	Primary dysmenorrhea intensity			Chi-square test			
Age	**Mild**	**Moderate**	**Severe**	**X^2**	**D.F**	**P value**	**Sig.**
18–21	9	19	61	7.980	6	.240	NS.
22–25	9	18	27				
Marital status							
Married	5	3	8	5.885	2	.050	S
Single	13	34	82				
Socioeconomic status							
Satisfied	10	22	51	5.483	4	.241	NS.
Satisfied to some extent	8	15	31				
Not Satisfied	0	0	8				
Address							
Urban	16	35	72	4.603	2	.100	NS.
Rural	2	2	18				
Residency							
Living with family	17	35	87	1.386	4	.847	NS.
Hostel	1	1	2				
Live with others	0	1	1				
BMI							
Below weight (BMI < 18.5)	0	2	4	3.372	6	.761	NS.
Normal weight (18.5 < BMI < 25)	10	23	60				
Over weight (BMI > 25)	8	12	26				
Tea							
Yes	13	21	58	1.350	2	.509	NS.
No	5	16	32				
Chocolate							
Yes	12	26	52	1.923	2	.382	NS.
No	6	11	38				
Family history							
Yes	16	32	82	.618	2	.734	NS.
No	2	5	8				
Pain relievers history							
Pharmacological	10	21	58	2.566	4	.633	NS.
Non pharmacological	8	16	30				
Hormonal therapy	0	0	2				
Type of cycle							
Regular	13	24	53	1.298	2	.523	NS.
Irregular	5	13	37				

X^2 = Chi-square, D.F. = degree of freedom, P. value = probability, sig. = significance, S. = significant, H.S. = highly significant, N.S. = not significant.

Table 10.
Association of primary dysmenorrhea intensity with some variables.

Association of PD intensity with QoL							
General health domain	**Mild**	**Moderate**	**Severe**	**X^2**	**D.F**	**P value**	**Sig.**
Poor	7	5	20	10.018	4	.040	S
Fair	10	32	60				
Good	1	0	10				
Limitation of activities							
Poor	1	2	17	8.035	6	.236	NS.
Fair	9	17	45				
Good	8	18	28				
Physical health							
Poor	1	4	29	19.677	8	.012	H.S
Fair	11	21	50				
Good	6	12	11				
Emotional health							
Poor	3	11	39	11.991	8	.152	NS.
Fair	13	18	43				
Good	2	8	8				
Social activities							
Poor	1	7	51	40.822	8	.000	H.S
Fair	6	22	24				
Good	11	8	15				
Pain domain							
Poor	0	2	75	210.944	8	.000	H.S
Fair	0	34	15				
Good	18	1	0				
Energy and emotion							
Poor	2	9	19	5.016	6	.542	NS.
Fair	15	26	65				
Good	1	2	6				

X^2 = Chi-square, D.F. = degree of freedom, P. value = probability, sig. = significance, S. = significant, H.S. = highly significant, N.S. = not significant.

Table 11.
Association of primary dysmenorrhea intensity with quality of life (SF-36) scale.

basically cause some aliments to most of females. A study [12] supported this result and found that primary dysmenorrhea adversely affect the QoL.

3. Conclusions

According to the findings and discussion of the study's findings it can be concluded that higher percentage of the sample aged of (18–21) and living in urban region. Majority of these female students were unmarried, their socioeconomic status was satisfied. More than half of respondents were with severe primary

dysmenorrhea. Majority the participants had positive family history of Primary dysmenorrhea. More than half of the study's sample appeared with regular period. Most of results showed that respondents using pharmacological agents as strategies of pain relief. The great majority domains of the quality of life showed fair assessment regarding primary dysmenorrhea. Present study shows that when primary dysmenorrhea intensity increases the quality of life will decrease. All the demographic data showed insignificant correlation with primary dysmenorrhea except the marital status. A significant to high significant association was found between primary dysmenorrhea intensity and quality of life.

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